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*Cooperative*  
**ECONOMIC INSECT  
REPORT**

**INSECTS NOT KNOWN**  
*To Occur In The United States*

[#142-149]

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**PLANT PEST CONTROL DIVISION**

**AGRICULTURAL RESEARCH SERVICE**

**UNITED STATES DEPARTMENT OF AGRICULTURE**



# **AGRICULTURAL RESEARCH SERVICE**

## **PLANT PEST CONTROL DIVISION**

### **SURVEY AND DETECTION OPERATIONS**

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations  
Plant Pest Control Division  
Agricultural Research Service  
United States Department of Agriculture  
Washington 25, D. C.

## INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

(142-149 of Series)

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This series was initiated early in 1957 as an aid to strengthening the detection program against foreign insect pests not known to be established in this country. The statements have been released individually in the Cooperative Economic Insect Report but, due to requests for complete sets of the series, the separates published during a year have been assembled under one cover at the close of that year. This is the sixth such compilation. The separates will continue to appear periodically in the Report. Preparation of this material has been made possible through the generous cooperation of Plant Quarantine and Entomology Research Divisions, ARS, the U. S. National Museum and individual cooperators.

A consolidated index of the six compilations is included with this issue. Recent nomenclatural changes of scientific names are also included.

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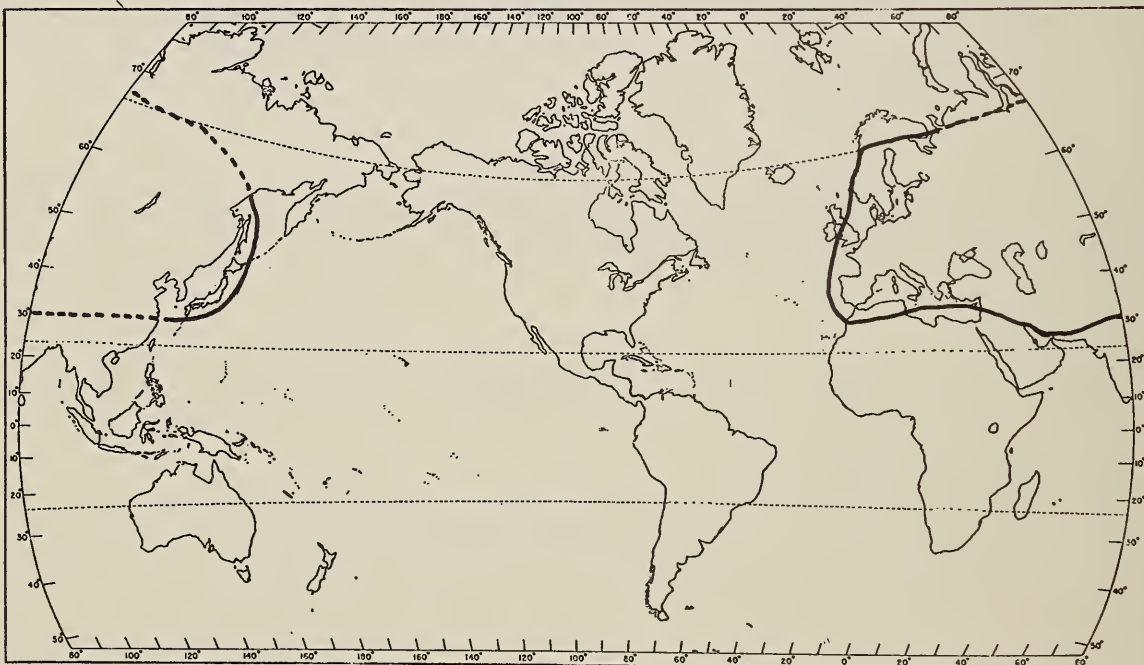
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## INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

### BLACK-VEINED WHITE BUTTERFLY (Aporia crataegi Linnaeus)

Economic Importance: Sporadically, this pierid has become a serious pest of orchards and hardwood forests in certain areas of Europe and Asia. In the spring of 1913, a serious outbreak totally defoliated plum, apple and pear trees in many localities of Bessarabia (Ukrainian SSR). It was also prevalent in other areas of Europe that same year. The pest caused severe losses to fruit growers in the Rhine Valley in 1922 and during the 1950's, and considerable damage was encountered in the Moravian region of Czechoslovakia in 1936-37. An outbreak during the years 1953-57 in Poland caused total loss of the fruit at some places. Outbreaks in the USSR are reported to last usually 3-4 years, and occur at intervals of 6-7 years.

The black-veined white butterfly was intercepted in the United States many times prior to 1926. Nursery inspections in several Eastern and Midwestern States during this period resulted in finding immature stages of this pest on imported nursery stock approximately 250 times. Records of the Federal Horticultural Board indicate that some 62 larval nests of this insect were intercepted on fruit and rose stocks arriving from France in 1921. Possibly the more rigid requirements imposed on foreign nursery stock for shipment to this country have been effective, in that the pest has not been intercepted at U. S. ports of entry since 1926. However, with the ever increasing amount of travel between this country and European and Asian countries by citizens of various nationalities, and the widespread distribution of the insect, it may be encountered more frequently in the future.



General Distribution of Aporia crataegi Linnaeus



Distribution: The species is recorded throughout most of Europe, and extends through Siberia into China, Korea and Japan. It also occurs in north Africa and the Near East (see map) but is not known to be present in Ireland or in southern and southeastern Asia.

Hosts: The species is a rather general feeder, having been recorded on many hosts. Fruit and wild rosaceous plants, as well as shade trees, are attacked. Apple, plum and pear are three of the most important fruit hosts, although others can be seriously injured.

Life History and Habits: In Germany, the butterflies usually appear in May, and the eggs are laid towards the end of the month on the upper surfaces of leaves. Eggs hatch in 20-25 days, and larval development extends from June until the following April. The pupal stage lasts 15-21 days.

In England, where the pest is more or less extinct, adults appear towards the end of June and July. Eggs are laid in batches of 100-200, and hatch in 23 days. Young larvae at first cluster together, then spin a web over the surface of the leaf, living gregariously and all feeding on the same part of the leaf. In later stages, they may leave the web at intervals to feed. Hibernation occurs about mid-October. Larvae batch together in separate compartments in a nest which is tough and dense, and which is spun over the remaining parts of the leaves and around the branches, generally between a small fork. Larvae become active in late March, emerging from the web to feed on the expanding buds and new leaves, and then pass through their final or fourth molt. The total larval development takes about 280 days. Pupation occurs in late May or early June and lasts for about 21 days, according to the temperature. Adults emerge and live for less than 21 days.

Description: ADULT - Wing expanse 69-76 mm. (2 3/4-3 in.). Wings roundish, white with conspicuous veins. Outer margin of forewing with more or less triangular patches of dusky scales; occasionally forming an irregular, dusky border. Marginal patches also sometimes present on hind wings, but not well defined. Patches may sometimes be absent. Fringes on wings very short; sometimes appear wanting. Sexes distinct; veins black in male and brownish in female, with exception of small veins which are black; scales on wings denser in male, thereby appearing whiter. This species is so variable within the limits here described that 22 subspecies, based upon minor differences, have been described. EGG - Honey-yellow, upright and ribbed from about middle to ornamented top. LARVA - Full-grown stage tawny brown, with paler hairs arising from white warts; stripes along sides and back black. Ventral surface grayish. Head, legs and spiracles blackish. Length 32-35 mm. (1 2/8-1 3/8 in.). CHRYSALIS - Creamy white, sometimes tinged with greenish and dotted with black. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies and the U. S. National Museum). CEIR 12(52):12-28-62.

(See illustrations on page 4)

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Some references: 1. Frohawk, F. W. 1934. The Complete Book of British Butterflies. pp. 291-295, London. 2. South, R. 1947. The Butterflies of the British Isles. pp. 32-33, London. 3. Stellwaag, F. 1924. Z. Agnew Ent. 10(2):273-312. 4. Balachowsky, A. and Mesnil, L. 1935. Les Insectes Nuisibles aux Plantes Cultivées. pp. 67-72, Paris (Illus.). 5. Ruszkowski, A. 1960. Prace Nauk. Inst. Ochr. Rośli. (Warsaw) 2(1):87-142. 6. Anonymous. 1922. J. Econ. Ent. 15(1):120.



Male (Left), Female (Right) of  
Aporia crataegi Linnaeus



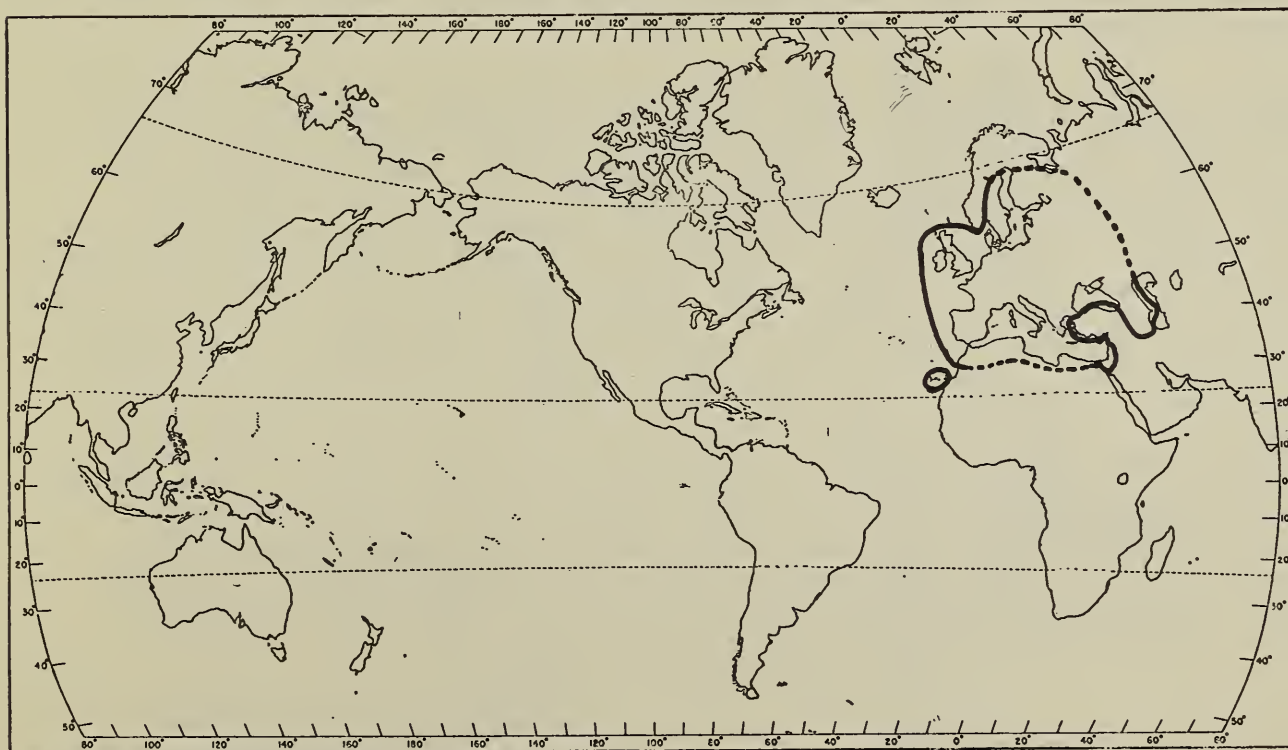
Larval Nests of Aporia crataegi Linnaeus



INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

CABBAGE THRIPS (Thrips angusticeps Uzel)

Economic Importance: This thrips has a wide range of host plants, some of which are more severely attacked than others. Several cole crops have been very seriously damaged in the seed bed in England, and local outbreaks on these crops have been reported in almost all areas of northern Europe. In addition, such crops as beets, flax, onions, peas, beans, summer grains and alfalfa have also suffered damage. In the Netherlands, Thrips angusticeps is considered to be by far the most important species of thrips on flax. Only two species of thrips breed on flax in the Netherlands, those being T. angusticeps and T. linarius Uzel. Damage to field crops is dependent on which generation of T. angusticeps is present. The short-winged or overwintering generation damages the young seedlings of spring crops which are not very resistant. The young plants that are not killed completely may be retarded in growth and damaged to such an extent that a reduction in yield results. Some winter crops can also be harmed by this overwintering generation. The long-winged or summer generation will infest such crops as flax, wheat, barley, rye, peas and alfalfa. In the Netherlands, larval infestations of the summer generation on flax that is grown on wheat, barley and pea stubbles is quite typical. The crop, which is not yet full grown, has a yellowish-gray color and, instead of hanging down, the tops stand up. Because the leaves assume a more horizontal position with respect to the stalks, the terminals are swollen. The top-most leaves may fall off. The growth of the flax crop is impaired so that its height falls short of that of an uninfested crop.



General Distribution of Thrips angusticeps Uzel

(Thripidae, Thysanoptera)

As of December 1961, the Division of Plant Quarantine had records of T. angusticeps having been intercepted at United States ports of entry a total of 113 times. Ninety of these interceptions were at New York, New York; 8 at Philadelphia, Pennsylvania; 7 at Boston, Massachusetts; 2 each at Charleston, South Carolina, and Baltimore, Maryland; and one each at the following cities: Pensacola, Florida; Seattle, Washington; San Francisco, California; and Chicago, Illinois. It is apparent, from the above information, that the pest is more likely to be introduced into the United States around the North Atlantic ports; however, increased frequency of interceptions at the Great Lakes ports is quite likely. Therefore, the flax-growing areas of the North Central States are more subject to infestation than previously.

Hosts: Attacks a wide variety of field crops. Some of the more important are flax, crucifers, lettuce, spinach, beets, onions, peas, beans, alfalfa, ryegrass and summer grains.

Distribution: Occurs throughout most of Europe, Morocco, Libya and the United Arab Republic (Egypt) in Africa, and Israel, Cyprus and Iran in the Middle East.

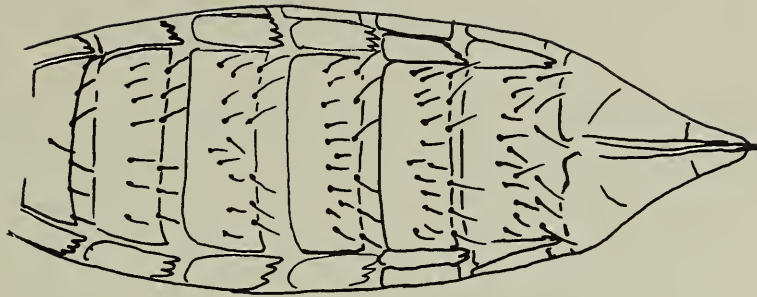
Life History and Habits: The biology, as studied in the Netherlands, is as follows: Two generations a year occur, a short-winged overwintering generation and a long-winged summer one. Both generations are polyphagous, but the long-winged generation shows a preference for flax and, to a lesser extent, for barley and wheat. Eggs are laid on the plants, and larvae feed on the growing points and pupate in the soil. The short-winged generation leaves the soil in the early spring and continues to emerge up to the latter part of May. The larvae of the long-winged generation emerge in the early part of May, the time depending on the temperature during the period preceding egg laying. The long-winged adults appear generally at the last of May or early June. The full-grown larvae of the short-winged generation hibernate in the soil at depths of 30 to 50 cm., sometimes to a maximum depth of 80 cm. The overwintering forms sometimes remain in the soil for more than one year.

Description: Adults - Entirely brown, except for light yellowish-brown areas as follows: Antennal segment III, basal portions of antennal segments IV and V, tarsi, and most of fore tibia. A rather small, slender thripid; about 1 mm. long; distinguished from other species of Thrips by the parallel-sided head; moderately long postero-angular pronotal setae (0.065-0.075 mm); complete, irregular posterior marginal comb on abdominal tergum VIII; 5 to 20 accessory setae on abdominal sterna III-VII, in addition to the 3 primary pairs of posterior marginals; unarmed fore legs; and in long-winged specimens, 5 or more distal setae on the fore vein of the wing. The wings extend scarcely past the end of the metathorax in short-winged forms and well beyond the middle of the abdomen in long-winged ones. Males have clear oval glandular areas anterior to the accessory setae on abdominal sterna III-VII. LARVAE - Pale yellow and can be distinguished from other thripid larvae by the relatively stout teeth in the posterior marginal comb on abdominal tergum VIII. In other thripids, except Taeniothrips inconsequens (Uzel), the comb has much finer teeth or is wanting. The comb in inconsequens is similar except that 2 pairs of teeth on either side are distinctly larger than the other 2 pairs. In angusticeps, the 4 mesal pairs are about the same size and there are 2 smaller pairs laterally. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies. Description furnished by Kellie O'Neill). CEIR 12(16):4-20-62.

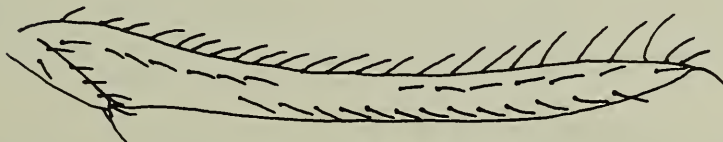
(See illustrations on page 7 )

Major references: 1. Franssen, C. J. H. 1955. Tijdschr. over Plantenziekten 61(3):97-102. 2. Franssen, C. J. H., and Mantel, W. P. 1961. Ibid. 67(2):39-51. Figures (except map): Larva from Ahlberg, O. 1926. Svensk Insektfauna. Tripsar. Thysanoptera 6:13. Teeth on comb of eighth abdominal tergite from Ahlberg, O. 1924. Central. f. Försöksvasender Jordbruksomradet. Ent. Avdelningen No. 42:22. Forewing and ventral aspect of abdomen of adult by Kellie O'Neill.

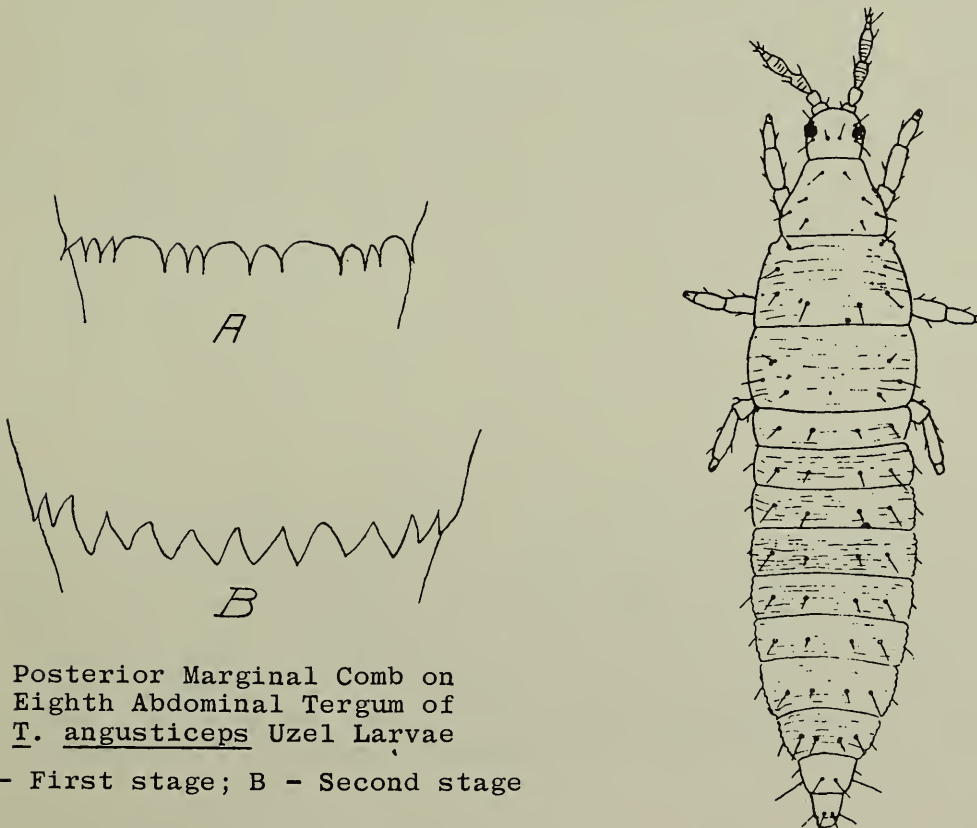




Ventral Aspect of Abdomen of T. angusticeps Uzel  
Adult, Segments II-X (all setae omitted  
except primary and accessory setae II-VII)



Forewing of T. angusticeps Uzel Adult  
(all fringe cilia omitted)



Posterior Marginal Comb on  
Eighth Abdominal Tergum of  
T. angusticeps Uzel Larvae

A - First stage; B - Second stage

Larva of T. angusticeps Uzel





## INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

### VESPEROS (Vesperus spp.)

Economic Importance: This genus of Cerambycidae is known to attack many economically important plants in the Mediterranean area. Severe larval damage has been recorded on a number of crops which include grapevines, olive, and a variety of garden and ornamental plants. At least 17 species and varieties of the genus Vesperus have been recorded in Europe and northern Africa, but the ones most often mentioned in the literature are V. luridus Rossi, V. strepens (F.) and V. xatarti Dufour. However, no representatives of the genus have been recorded in the Western Hemisphere. Due to the long larval development period, survey for the pest is rather difficult. Young nursery stock and vineyards may suffer considerable root damage during the final year of the larval development period. Various controls have been recommended, including fumigation, soil treatment with insecticides, collecting the larvae by means of deep cultivation, and the use of trap crops such as peas and beans around or across the rows.

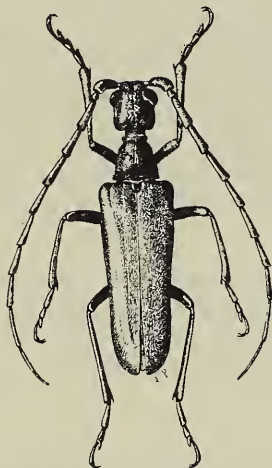
Distribution: Vesperus luridus has been recorded in Spain, Portugal, France and Italy; and V. strepens and V. xatarti in Spain, France and Italy. In addition to the above-named species, representatives of the genus have been reported in Algeria, Crete, Morocco and Turkey (Smyrna); one or more species in each country. A total of 8 species has been recorded in Spain alone.

Hosts: Larvae attack any herbaceous plant and many shrubs and trees. There are records on fruit plants, ornamental plants, oaks and pines, and particularly on meadows with medicinal herbs; on garden plants, especially on vegetables and vines.

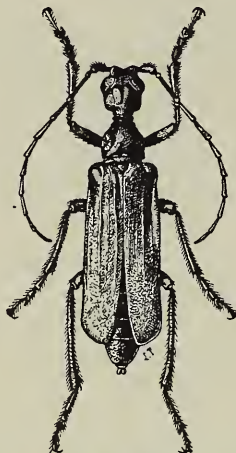
Life History and Habits: The biology of V. strepens as studied in Italy is as follows: The adults are nocturnal and begin appearing at dusk from August until October. During daylight hours and the cold hours of night they remain hidden in protected places. The female deposits hundreds of eggs near roots of a tree, under dry grass, in crevices of a tree trunk, or around the stems of grasses; preferably in areas where the soil is soft and loose. Upon hatching, young larvae immediately dig deeper into the soil in search of food. At first they feed on young tender roots, but, as they grow rapidly, they soon attack the larger roots of woody plants. Larvae move from one plant to another by means of tunnels which may be 12-18 inches deep in cultivated soil and 6-8 inches in uncultivated soil. Normally, larvae are found grouped together in considerable numbers. Depending upon the region, larvae require 3-4 years to complete their development. Larval activity occurs twice a year - once during the spring and once during the fall. During the summer and winter they usually aestivate. Pupation takes place in earthen cells during July below the larval habitat, and subsequent adults come to the soil surface in early August, using the larval tunnels. Afterwards, adults dig, for their use, a hole in the ground that is characterized by raised edges.

Description: ADULTS - Body elongate and coriaceous. Head and sternum a rusty yellow-brown; other parts pale yellow. Sternum rounded and smooth on sides and tapered toward front. Legs elongated and pubescent. Illustrations of male and female adults of Vesperus luridus, V. strepens and V. xatarti may be seen on following page. The male in each case has longer antennae and is smaller in size. EGGS - Small, white and elongate. LARVAE - Mature forms characteristically different from all other Cerambycidae. Body short and strongly conical, almost cubical, with 4 distinct surfaces. Ventral surface plane; dorsal surface strongly convex, almost cut off in rear; lateral surfaces slightly rounded. Entire body yellowish-white and covered with pale pubescence. Head and prothorax prominently developed and meloid-like; mandibles black at apex.

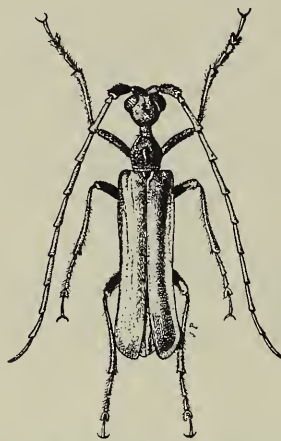
First 6 abdominal segments with transverse band consisting of fine granules, and another band with pale pubescence along posterior margins. Legs strong and ciliate. Length 18-21 mm. Young larvae cylindrical and have long, lateral bristles. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 12(4):1-26-62.



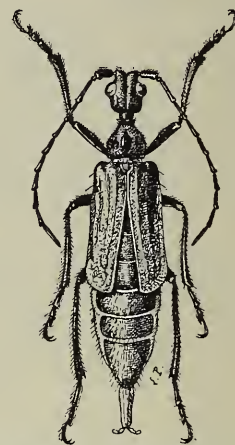
Vesperus strepens  
(male)



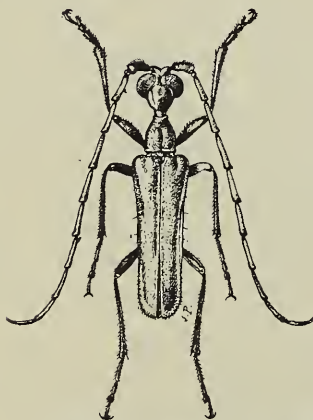
Vesperus strepens  
(female)



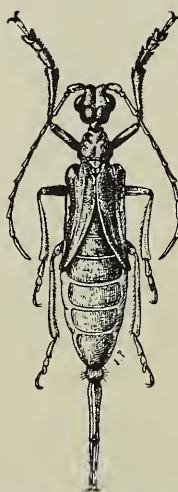
Vesperus xatarti  
(male)



Vesperus xatarti  
(female)



Vesperus luridus  
(male)



Vesperus luridus  
(female)



Larva of Vesperus xatarti

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Major references: 1. Balachowsky, A. and Mesnil, L. 1935. Les Insectes Nuisibles aux Plantes Cultivees. Vol. 1, 1137 pp., Paris. 2. Beffa, G. D. 1949. Gli Insetti Dannosi all 'Agricoltura e i Moderni Metodi e Messi di Lotta. 978 pp., Milan. (pp. 586-588). 3. Mendizabal Villabla, M. 1939. Bol. de Patol. Veg. y Ent. Agr. 8:65-86. Madrid. 4. Planet, L-M. 1924. Histoire Naturelle des Longicornes de France. (Encycloped. Entomolog. II) pp. 39-44, Paris. Figures: Larva from Balachowsky and Mesnil, and adults from Planet.



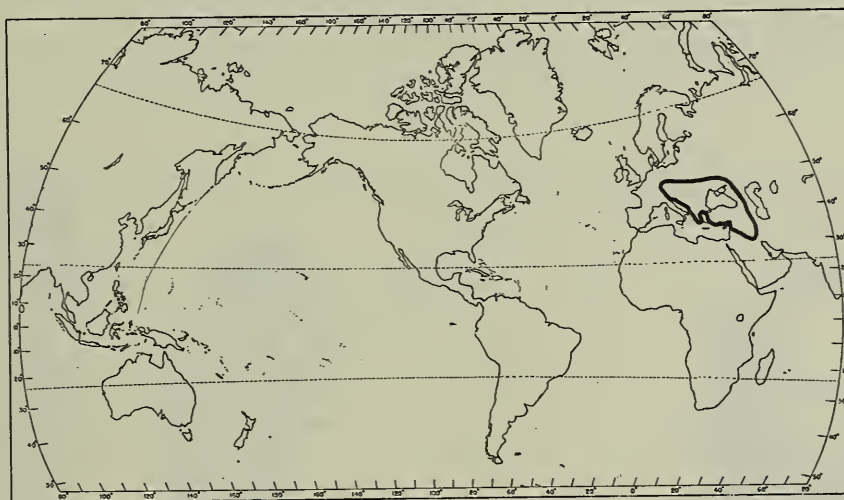
## INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

### LUCERNE BEETLE (Phytodecta fornicatus Bruggem.)

Economic Importance: This chrysomelid is an important pest of alfalfa in parts of middle Europe. Considerable damage has been recorded in Bulgaria, Romania and Yugoslavia. Larvae have caused complete loss of the crop on occasion in this area of Europe. Adults feed on the leaves of alfalfa and black medic, and larvae on leaves, petioles and young stems. Leaf-feeding symptoms differ somewhat in that the larvae cause a "ragging" appearance, whereas the adults more deeply scallop the leaves. Both stages perforate the leaves somewhat, but adults more so. Petioles and young stems may be cut entirely through by the larvae.

Hosts: Alfalfa and black medic.

Distribution: Occurs throughout most of middle Europe and parts of the Near East (Germany, Poland, Czechoslovakia, Austria, Hungary, Italy, Yugoslavia, Greece, Romania, Bulgaria, Turkey, Syria, Iraq and the U.S.S.R.). The species has also been recorded in the literature from England and North Africa.



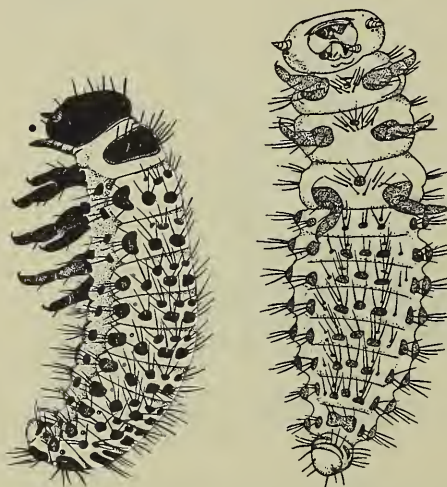
General Distribution of Phytodecta fornicatus Bruggem.

Life History and Habits: The biology as recorded in Bulgaria was as follows: Adults overwintered in the soil. Emergence began when the soil temperature rose to 50-53.6° F. and lasted 15 to 20 days. After maturation feeding for 2-5 days, adults mated and laid eggs in batches of 2-22 on lower surface of the leaves. Oviposition lasted 38-41 days. In the laboratory, females laid about 165 eggs during a period of 1 to 12 days - 76 percent on the first day. Average adult longevity was 15-16 days for males and 41 days for females. Eggs hatched in about 5 days at 73.4° F. and 9 days at 57.2° F. Larval development required 15-23 days, depending on the temperature, and pupation was completed within 3 weeks, but most of the adults remained in the soil and penetrated deeper to hibernate. Some, however, came to the surface, usually in the middle of June, fed on the alfalfa for 2-3 weeks, then reentered the soil for hibernation. There was only one generation a year.

(Chrysomelidae, Coleoptera)

Studies in Romania indicated the following additional information: Adults were observed as early as March on alfalfa tips in warm weather. Also, the number of eggs oviposited ranged from 61 to over 1,000, with most females continuing to oviposit until they died. Egg and larval stages lasted 6-9 and 14-22 days at an average temperature of 69.17° F., the latter period including a prepupal stage of 2-6 days. Pupation occurred in the soil at a depth of 2 inches and adults emerged after 5-9 days at the same temperature. During hot weather, young adults reentered the soil after a short period of feeding and came to the surface only occasionally and for short periods before hibernation.

Description: EGG - Newly laid egg yellowish-white or greenish-white, elongate, oval; shell reticulate and shiny. Older egg becomes transparent in appearance, with dark zone at anterior end. Egg changes shape markedly on fourth day, with a protrusion appearing just before hatching. LARVA - Newly hatched larva nearly white, but turns dark shortly. Length 1.5 to 2-3 mm. Full-grown larva (fourth stage) yellowish with black spots; head black; prothorax dorsally with black plates divided by midline; meso- and metathorax with 2 rows of transverse dark sclerites (4 in each row) dorsally; first 6 abdominal segments also with 2 transverse rows of sclerites (6 in each row) dorsally; 7th abdominal segment with 2 thin, transversely elongate sclerites, flanked by smaller ones, dorsally; 8th abdominal segment with one transverse, elongate sclerite dorsally. (See illustrations below). Ventral surface of full-grown larva as illustrated below. Length 8-9 mm. PUPA - Yellowish-orange, 6-7.5 mm. long. ADULT - Young adult uniformly yellow, with eyes and ends of appendages dark. Nine to fourteen-day-old adults dark yellow dorsally, with spots on thorax and elytra black; dark yellow with reddish tinge ventrally. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 12(35):8-31-62.



Adult of *Phytodecta fornicatus* Bruggem.      Larva of *Phytodecta fornicatus* Bruggem.  
(Lateral and Ventral Views)

Major references: 1. Knechtel, W. and Hrisafi, C. 1939. In VII Internatl. Kong. f. Entomologie, Verhand. Band 4:2533-2543. In Ger. 2. Statelov, N. 1936. Minist. Landw. Staatsdom Pub. No. 63, 44 pp., Sofia. In Bulg. 3. Vukasovic, P. 1937. Arch. Minist. Poloprivr. 4(7), (47 pp. in reprint). In Serbian. 4. Voukassovitch, H. and Voukassovitch, P. 1930. Rev. de Path. Veget. et d'Ent. Agr. 17(10):413-418. 5. Weise, J. 1916. In Coleopterorum Catalogus (W. Junk, Ed. by S. Schenkling) Pt. 68 Chrysomelidae: 12, Chrysomelinae. p. 182.

Figures (except map) from Knechtel, W. and Hrisafi, C.



INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

A Pasture Scarab (Cyclocephala signaticollis Burmeister)

Economic Importance: This scarab, which was described by H. C. C. Burmeister in 1847, is a native of Argentina and Uruguay. It is known to attack the roots of native grasses and several cultivated and pasture crops in those countries. At some time prior to 1947, the species was introduced into Australia. The species was known to occur in a number of Sydney suburbs by 1955. Although the pest caused only minor damage by 1955, Australian officials were concerned that the species might spread into other areas more favorable to its survival. C. signaticollis is closely related to a number of serious pests in South America and the United States, which occasionally cause severe damage to improved pastures, lawns or vegetable crops. The northern masked chafer (Cyclocephala borealis Arrow) and southern masked chafer (C. immaculata (Olivier)) are probably the two most commonly encountered and widespread species in the United States.

The distribution of C. signaticollis in South America and Australia is quite similar in that the species is recorded in similar latitudes. Sydney is 33° 52' S. and Buenos Aires is 34° 36' S. In the United States, these latitudes would be comparable to Charleston, South Carolina, on the east coast, and San Diego, California, on the west coast.

Hosts: Recorded in lawns and pastures in Australia and observed attacking native grasses, alfalfa, wheat, corn, flax, sunflower and barley in Argentina.

Distribution: Recorded in Argentina (Buenos Aires, eastern Cordoba, southern Santa Fe, Entre Rios Provinces, and the northeast of the La Pampa Territory), Uruguay and Australia (Sydney area of New South Wales).

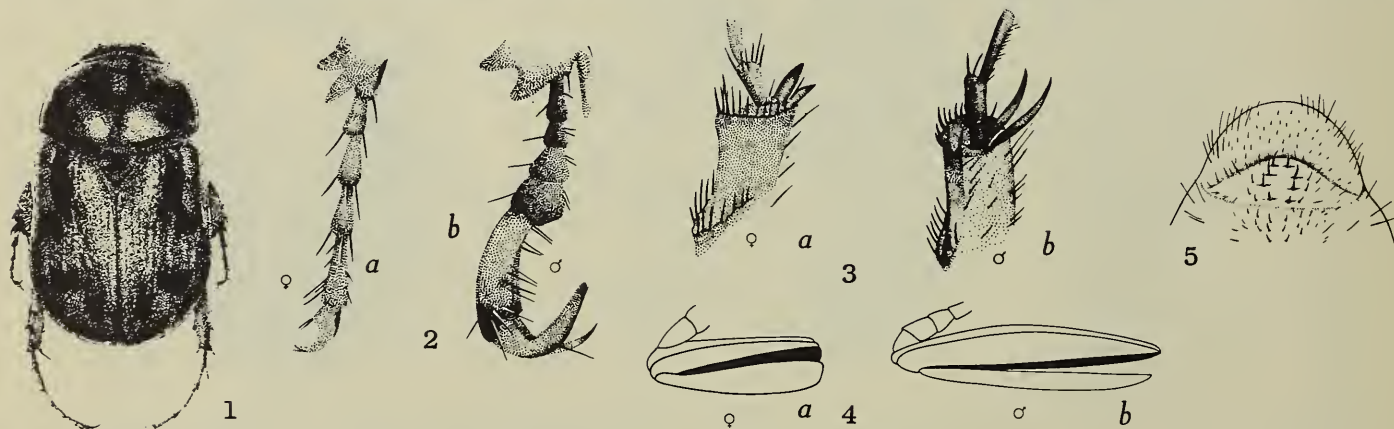


General Distribution of Cyclocephala signaticollis Burmeister



Life History and Habits: As far as known, nothing has been published regarding the biology of *C. signaticollis* except for the field observations made in Australia. In the Sydney area, larval feeding and damage to vegetation are confined to the autumn and early winter months, there being no resumption of activity in the spring. Larval development is very rapid and most of the larvae complete their feeding by late fall. The adult flight period is from late November to early January, with peak flights occurring in late December. The adults first appear in flight at dusk, becoming strongly attracted to lights after dark; males outnumber females. Copulation occurs on the ground and the females burrow into the soil immediately. The larvae seem to prefer high soil moisture requirements, because the greatest numbers can be found in shaded or otherwise naturally damp situations at the end of May. The average annual rainfall in Sydney (48 inches) is appreciably greater than Buenos Aires (37 inches), but the temperature regime of Sydney is very similar to that of Buenos Aires.

Description: ADULT - Length 1.34 to 1.50 cm. Dorsally glabrous; color light brown to brownish-beige, with the pronotum somewhat darker than the elytra. Elytra and pronotum with complex, bilaterally symmetrical, dark brown markings and shallow irregular punctation; elytral markings obsolete in some specimens, but always present on pronotum. Head dark brownish-black; clypeus dull reddish-brown. Abdomen, legs and coxae light brown, the latter with erect golden hairs. Pygidium lightly and irregularly punctate, glabrous except for central tuft of yellowish hairs on posterior margin. Anterior claws of female equal and simple, and tarsal segments equal in length. Anterior claws much larger in male, strongly asymmetrical, the larger claw with a fine subapical spine externally; last tarsal segment greatly enlarged to support claws and preceding segments correspondingly shorter and broader. LARVA (third instar) - Head capsule yellowish-brown and slightly rugulose; width 4.4 to 5.2 mm.; weakly pigmented ocellus present at base of each antenna. All tarsal claws long and slender. Two posterior pairs of abdominal spiracles larger than first 6 pairs, being approximately equal in size to those of prothorax. Raster and lower anal lip bear numerous small hamate setae; in addition, on the lower anal lip there are some 7 to 9 exceptionally large and deeply pigmented hamate setae, with their sockets arranged in a roughly circular or oval pattern; anal slit transverse. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies and U. S. National Museum). CEIR 12(20):5-18-62.



Figures of *Cyclocephala signaticollis* Burmeister:  
1. Adult Male, Dorsal View. 2. Anterior Tarsus;  
(a) Female, (b) Male. 3. Spurs of Posterior Tibia;  
(a) Female, (b) Male. 4. Antennal Club; (a) Female,  
(b) Male. 5. Raster of Third Stage Larva.

Major reference and figures (except map): Carne, P. B. 1956. Linn. Soc. N. S. Wales Proc. 81(3):217-221. Figures by L. A. Marshall.

## INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

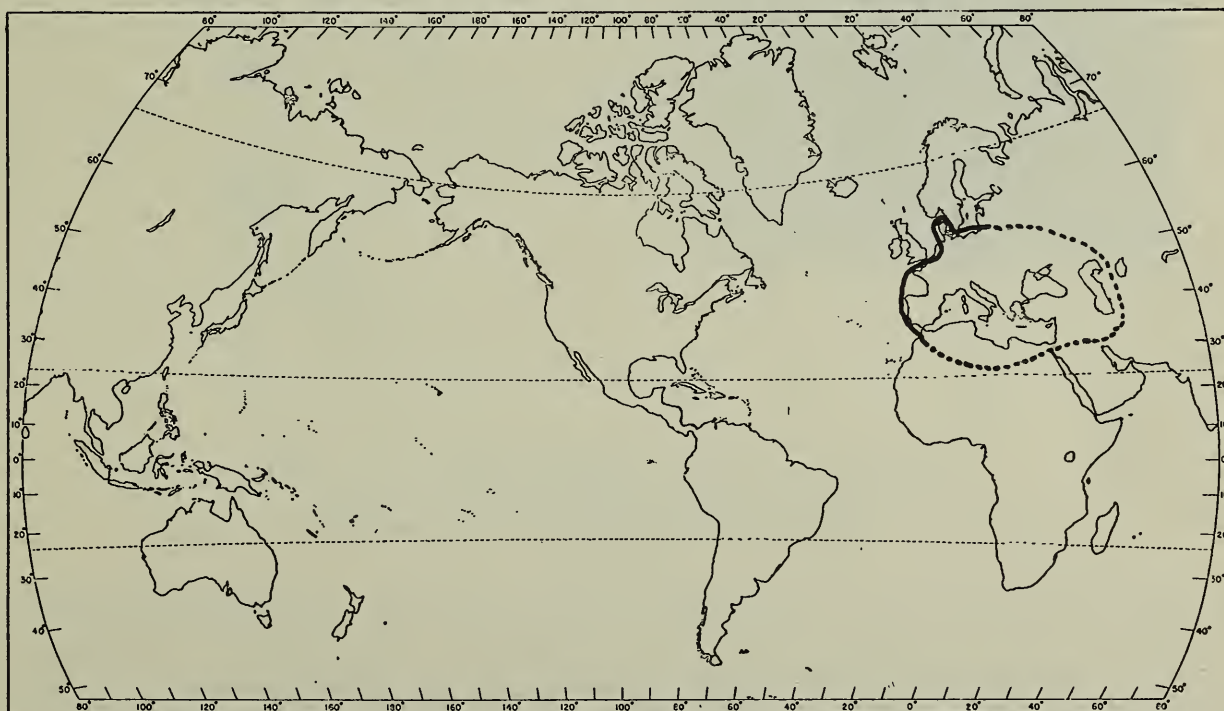
### A WHEAT STINK BUG (Aelia rostrata Boh.)

Economic Importance: This pentatomid is one of the most important pests of small grains in parts of southern Europe. During outbreak years, damage to small grains, particularly to wheat, can be serious. The nymphs and adults feed on grains of cereals, causing them to shrivel, and the flour milled from injured grains is of inferior quality. Several other species of Aelia have periodically caused damage to small grains in Europe, the Near East and Africa. Some of these species are undoubtedly of considerable importance on various occasions, but in many cases they are regarded as only minor pests. Climatic conditions and cultural practices are probably very important factors.

Several species of Aelia have been intercepted at U. S. ports of entry in past years. A. rostrata was taken at the Washington, D. C., Inspection House on two occasions. Other species were intercepted at Philadelphia, Pennsylvania; New Orleans, Louisiana; New York, New York; and at Washington, D. C.

Hosts: Wheat, rye, barley, oats and many wild and cultivated grasses.

Distribution: Recorded in Austria, Bulgaria, Czechoslovakia, Denmark, France, Germany, Italy, Iran, Poland, Portugal, Spain, Turkey, U.S.S.R. and north Africa. The species probably occurs throughout the Mediterranean Basin.



General Distribution of Aelia rostrata Boh.

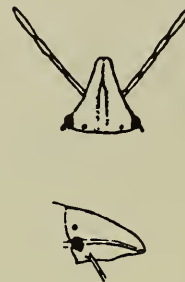


Life History and Habits: The biology as recorded in Spain is as follows: Overwintering adults migrate to wheat and sometimes barley in late April or early May. The females oviposit in May on dry leaves at the base of the plants or on the ground, but rarely on the upper parts of the plants, and usually lay their eggs in groups of 8 to 15. Eggs hatch in 5 to 15 days and nymphs pass through 5 stages which are completed in about 25 days. The species then passes through another complete generation before the adults seek hibernation quarters in protected places in the open. Nymphs and adults both feed on the grain, especially when it is in the milky stage.

Description: ADULT - Length 11-12 mm. Generally pale; marked with longitudinal stripes alternately fuscous and ochraceous, with fuscous ones broader and more indefinite; pale median line extends from apex of head back across pronotum, to apical third of scutellum to point where frenum ends. Head pointed, deflected and strongly arched; and head elongate, much attenuated in front. (See illustrations below). NYMPHS - First two instars dark, with head and thorax almost black, and abdomen pale red with scattered black punctures and transverse bars present. Traces of 3 longitudinal ochraceous stripes present on third instar, with abdomen turning grayish-ochraceous. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 12(27):7-6-62.



1



2

Figures of Aelia rostrata Boh.: 1 - adult,  
2 - head (dorsal and lateral views).

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Major references: 1. Balachowsky, A. and Mesnil, L. 1936. Les Insectes Nuisibles aux Plantes Cultivees, pt. 1:1091-93, Paris. 2. Alfaro, A. 1923. Bol. Pat. Veg. Ent. Agr. (Madrid) 21:19-37. Figures of head from Stichel, W. 1925. Illustrierte Bestimmungstabellen der Deutschen Wanzen (Hemiptera-Heteroptera) Ser. Polyneuria Reuter: Superfam. Pentatomoideae Reuter. Verlag naturwissenschaftlicher Publikationen. 36 pp., Berlin-Niederschonhausen. Adult - USDA photograph.



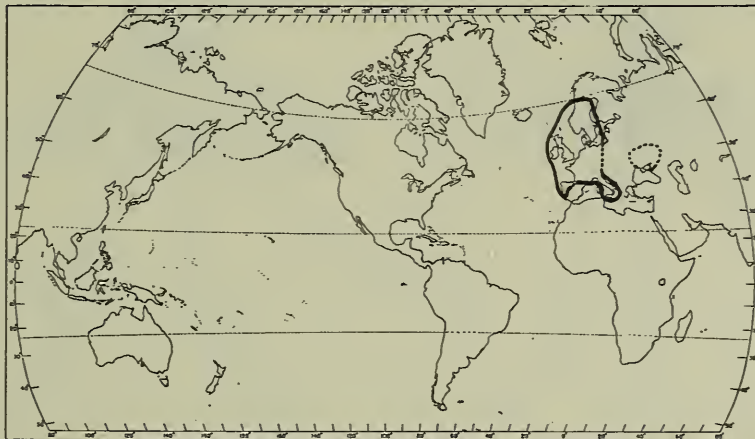
INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

SWEDE MIDGE (Contarinia nasturtii (Kieffer))

Economic Importance: Outbreaks of this midge periodically cause extensive damage to several types of crucifers in Great Britain and on the mainland of Europe. Rutabaga is particularly subject to attack in Great Britain. Young crucifers that are under larval attack develop swollen stalks which bend sharply inward across the top of the plant and press upon and compact the terminal bud, while the leaf blades become crumpled. This damage retards the general development of the plant. In addition to this "leaf-crumple" effect, growth of secondary shoots or a "many-necked" condition usually follows. Subsequently, rotting of the crown, neck and bulb sometimes occurs. Larval damage to the flowers of the crucifers can also be serious, especially when the crop is being grown for seed. Only a few seeds develop from infested flowers as they become swollen and remain closed. This species is seldom intercepted at United States ports of entry, only once as far as known, but is generally considered a threat to crucifer production.

Distribution: Widely distributed in Europe, being recorded in Austria (?), Belgium, Czechoslovakia, Denmark, France, Germany, Great Britain, Ireland, Italy, Netherlands, Norway, Portugal, Sicily, Sweden and the USSR (Ukraine).

Hosts: Wild and cultivated crucifers, including rutabaga, cabbage, broccoli, cauliflower, kale, turnip, rape, horseradish, charlock, radish, white mustard, black mustard, tumbled mustard, yellow fieldcress, bog marshcress, pennycress, flixweed tansymustard, sainfoin, Sisbyrium officinale, S. irio, S. orientale, S. loeselii and Camelina microcarpa.



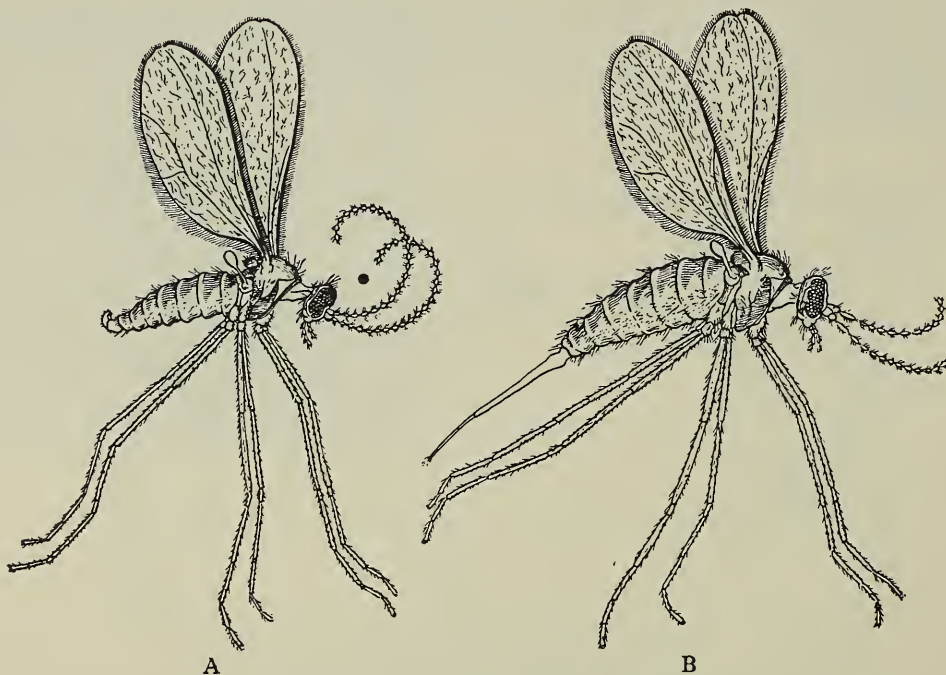
General Distribution of Contarinia nasturtii (Kieffer)

Life History and Habits: Several overlapping generations occur each year; as many as 5 have been recorded in Germany, but 3 is the usual number in most areas. It is generally accepted that the second and third generations are the most destructive. The adults of the first brood appear in England in June and the succeeding broods until September. Eggs are laid on tender parts of host plants; in strings or clusters of 15-20 mostly near the base of the leaf stalks on their upper surface or the younger leaves in the heart of the crown. Some may be found on the leaf blades. Larvae hatch in 3-4 days and feed on the leaf epidermis; they do not mine below the surface. The larval development period is variable, lasting for about two to three weeks depending on the weather conditions. When full fed, larvae descend to the ground and pupate in silken cocoons in the upper

(Cecidomyiidae, Diptera)

two inches of the soil. The adults of the new generation emerge in one to three weeks, depending on the local and seasonal conditions. The larvae hibernate in a cocoon in the soil and pupate in the spring.

Description: EGG - 0.27 mm. by 0.08 mm., with a pedicel measuring 0.06 mm. LARVA - Pale yellow, legless, with power of jumping. A spatula or breast bone is present. Length 2-2.5 mm. ADULT - Male: Head - eyes black, broader at top, contiguous, lower part of face, proboscis and palpi whitish; antennae 1.7 mm. long, 2 + 12, the segments simple with one whorl, first flagellar segment without stem, the succeeding segments globular with two whorls. Neck yellow, prothorax and scutellum slate gray, on the latter are two shiny black furrows, running lengthwise, in which are two rows of gray hairs; between the first and second coxa is an oblique patch which stretches sideways as far as the humerus. Wings 1.6 mm. in length, strongly iridescent, long and wedge-shaped at the base. Abdomen lemon-yellow, with some indistinct transverse stripes. Female: Antennae 0.8 mm. long, 2 + 12, the first flagellar segment is constricted in the middle and is twice the length of the succeeding ones, which are cylindrical with short stems; ovipositor whitish and capable of considerable extrusion, it is pointed like a needle. Length 1.6 mm. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 12(21):5-25-62.



Contarinia nasturtii (Kieffer) Adults. A, Male; B, Female

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Major references: 1. Barnes, H. F. 1946. Gall Midges of Economic Importance. Vol. 1, 104 pp., London. 2. Smith, K. M. 1948. A Textbook of Agricultural Entomology. 289 pp., Cambridge.

Figures (except map) from: Taylor, T. H. 1912. Cabbage-top in Swedes. Univ. Leads & York. Coun. Agr. Educ. No. 82, 21 pp.



INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

TUMBU FLY (Cordylobia anthropophaga (Blanchard, 1872))

Economic Importance: This calliphorid is one of the most important flies that cause myiasis in man in Africa. It is also considered an important pest of dogs and monkeys. In the case of dogs, death sometimes results when the infestations are heavy. Rats, both black and brown, appear to be the normal host, and probably are the reservoir of the parasite in nature.

Infestations in man appear to be most common during rainy weather, but this is not always the case. Infestations may be found whenever reservoir rats are prevalent in or around the housing area, and when proper preventive measures have not been undertaken. The young larva usually enters the skin of man without making itself felt, but there are records of severe, local reactions. As the larva develops, a red papule forms which ultimately develops into a boil, open at the apex and disclosing the larva which resembles a core. Pain and irritation may cause loss of sleep when the larva is in the later stages of development. Although pus formation is not great, serous drainage may exude at times when the larva is feeding. The skin hardens, and the area around the tumor is tender to pressure; the cavity is out of proportion to the size of the larva. After the larva is removed, the symptoms disappear and healing is rapid. In case of infection however, particularly when the larva dies within the cavity, the tumor may become a purulent abscess.

Distribution: Widely distributed in Africa; from about 18° North to 30° South latitude (from Senegal in the West and Sudan in the East to the Republic of South Africa (Transvaal, Natal) in the South).

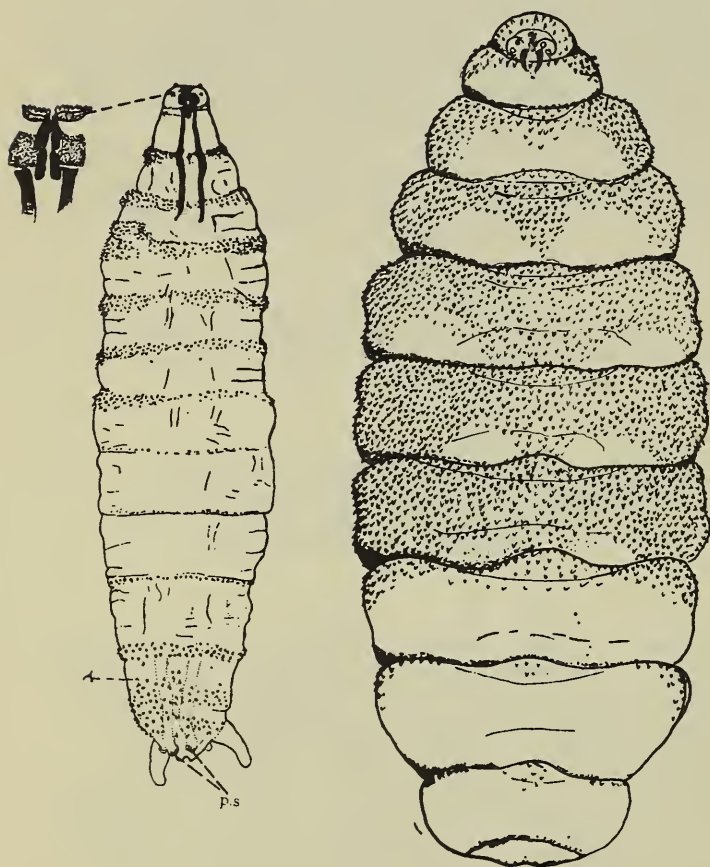
Hosts: Besides man, recorded on a number of wild and domestic animals which include horse, goat, wart hog, ant bear, dog, monkey, guinea pig, rats, cat, squirrel, mongoose, antelope, rabbit, Arabian camel (Camelus dromedarius) and leopard.

Life History and Habits: Females lay eggs, 500 or more each, in places frequented by the host, such as bedding, clothing and sand contaminated with excreta. Young larvae hatch in 2 days and penetrate the skin of the host with the aid of spade-like, toothed oral hooks and fleshy processes on the posterior margins of the eighth segment. Three larval instars are passed within the tumor on the host. After 8-10 days, they emerge and drop to the soil. Pupation takes place after a prepupal stage of about 2 days. Adults emerge in about 10 days. The life cycle, from egg to adult, takes about 22-24 days. In captivity, an adult female lived up to 18 days, but laboratory-reared females generally lived about 2 weeks. In nature, adults have been observed feeding on fruit juices as well as blood and excreta.

Description: ADULT - Rather large (8-10 mm. or 3/8 in.), yellowish-brown and covered with numerous small, dark hairs. Eyes of male large and slightly separated; vertex of female wide. Thorax marked with 2 broad, dark stripes which do not quite reach scutellum. Abdomen rounded and marked with dark bands. Legs yellow. Wing venation similar to that of Cochliomyia hominivorax, the American screw-worm. LARVA - First stage about 0.75-1 mm. (1/25 in.) in length. Armed with several rows of small, backwardly directed spines on anterior borders



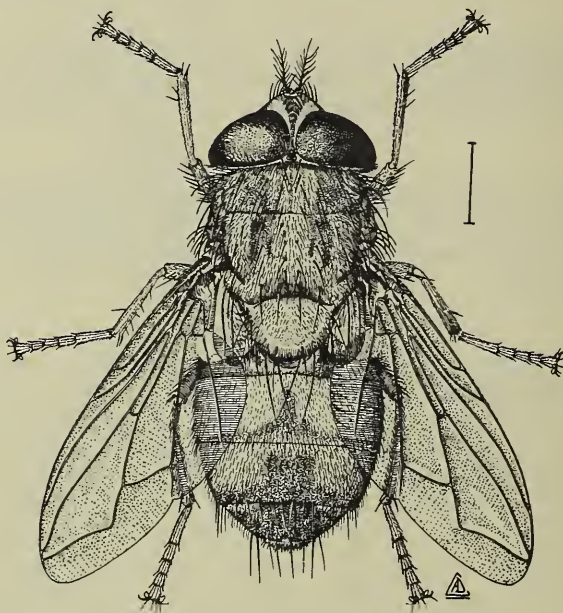
of most segments, except abdominal segments 5 and 6, of which the latter has a few forwardly directed spines. Posterior margins of 8th segment bear pairs of fleshy processes, several of which are long; these processes form most diagnostic feature of larva. Third-stage larva cylindrical and measures about 12-14 mm. (1/2 in.) in length. Thoracic and first four abdominal segments covered with numerous, small, yellow, backwardly directed spines which give a speckled or mottled appearance. Distal four abdominal segments lacking or with few spines. Shape grublike; anterior end rather blunt, while posterior end is truncate; body segments transversely wrinkled on dorsal and ventral sides, especially ventral side, and puckered laterally. Posterior spiracles small and close together, peritreme poorly developed. Spiracular slits long, narrow and somewhat sinuous. EGG - White, banana-shaped, almost straight on one side and curved on other; tapering somewhat towards one end. Longitudinal grooves on surface; reticulation hexagonal. Length 0.8 mm. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 12(48):11-30-62.



First-stage and full-grown larvae of Cordylobia anthropophaga.



Anterior spiracles (A); posterior spiracles (B), of C. anthropophaga.



Adult male of Cordylobia anthropophaga.

Illustrations: Spiracles and first-stage larva from Patton, W. S. and Evans, A. M. Third-stage larva from Blacklock, B. and Thompson, M. G. Drawing of adult male by A. D. Cushman, USDA.

Major references: 1. Blacklock, B. and Thompson, M. G. 1923. Ann. Trop. Med. and Parasitol. 17(4):443-510. 2. James, M. T. 1947. U. S. Dept. Agr. Misc. Pub. 631:80-82. 3. Patton, W. S. and Evans, A. M. 1929. Insects, Ticks, Mites and Venomous Animals of Medical and Veterinary Importance. Pt. I. Medical. 786 pp., Croydon, England. 4. Roberts, F. H. S. 1952. Insects Affecting Livestock. 267 pp., Sydney. 5. Smart, J. 1956. A Handbook for the Identification of Insects of Medical Importance. 303 pp., London.

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1/ Recorded in U. S. in 1962.

3/ See scientific name change, page 24.



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1/ Recorded in U. S. in 1959.

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<sup>1/</sup> Recorded in U. S. in 1962.

<sup>3/</sup> See scientific name change, page 24.

<sup>2/</sup> Recorded in U. S. in 1959.

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#### Scientific Name Changes in Volumes Seven Through Twelve

Celery fly - Euleia heraclei (L.)

Cereal leaf beetle - Oulema melanopa (L.)

Paddy borer - Tryporyza incertulus (Walk.)

Plum fruit moth - Grapholitha funebrana Treitschke

Plum tortricid - " " "

Red plum maggot - " " "

Rice stem borer - Tryporyza incertulus (Walk.)





